

29. (New) The composition of claim 28, wherein the hantavirus is selected from the group consisting of Seoul virus, Dobrava virus, Hantaan virus, Puumala virus, Sin Nombre virus, Black Creek Canal virus, Bayou virus, New York virus, Andes virus, and Laguna Negra virus.

30. (New) The composition of claim 28, wherein the hantavirus is the Seoul virus.

31. (New) The composition of claim 28, wherein the hantavirus is the Dobrava virus.

32. (New) The composition of claim 28, wherein the hantavirus is the Hantaan virus.

C¹
33. (New) The composition of claim 28, wherein the polynucleotide comprises SEQ ID NO:1.

34. (New) The composition of claim 28, wherein the polynucleotide comprises SEQ ID NO:3.

35. (New) The composition of claim 28, wherein the promoter is the cytomegalovirus immediate early promoter.

36. (New) The composition of claim 28, wherein the inert particle is selected from the group consisting of gold particles, silver particles, platinum particles, tungsten particles, polystyrene particles, polypropylene particles, and polycarbonate particles.

37. (New) A method for inducing a protective immune response to a hantavirus protein in a mammal comprising

- (a) coating onto an inert particle a polynucleotide comprising a promoter operative in a mammalian cell and a hantavirus M gene segment encoding a

G1 glycoprotein and a G2 glycoprotein, wherein the hantavirus protein and the hantavirus M gene segment are derived from the same species of hantavirus; and

- (b) accelerating the inert particle of (a) into epidermal cells of a mammal in vivo, to generate an immune response sufficient for protection in the mammal against a challenge by a hantavirus of the same species as the hantavirus protein and the hantavirus M gene segment are derived from.

38. (New) The method of claim 37, wherein the species of hantavirus is selected from the group consisting of Seoul virus, Dobrava virus, Hantaan virus, Puumala virus, Sin Nombre virus, Black Creek Canal virus, Bayou virus, New York virus, Andes virus, and Laguna Negra virus.

39. (New) The method of claim 37, wherein the hantavirus is the Seoul virus.

40. (New) The method of claim 37, wherein the hantavirus is the Dobrava virus.

41. (New) The method of claim 37, wherein the hantavirus is the Hantaan virus.

42. (New) The method of claim 37, wherein the polynucleotide comprises SEQ ID NO:1, and the hantavirus species is Seoul virus.

43. (New) The method of claim 37, wherein the polynucleotide comprises SEQ ID NO:3, and the hantavirus species is Seoul virus.

44. (New) The method of claim 37, wherein the promoter is the cytomegalovirus immediate early promoter.

45. (New) The method of claim 37, wherein the inert particle is selected from the group consisting of gold particles, silver particles, platinum particles, tungsten particles, polystyrene particles, polypropylene particles, and polycarbonate particles.

46. (New) A method for inducing a protective immune response to a Seoul hantavirus protein in a mammal comprising

- (i) coating onto an inert particle a polynucleotide comprising a nucleic acid encoding a Seoul hantavirus M gene segment protein comprising the sequence set forth in SEQ ID NO:1 operatively linked to a promoter active in cells of a mammal;
- (ii) accelerating the particles of (i) into epidermal cells of the mammal in vivo, to generate an immune response sufficient for protection against a Seoul hantavirus challenge in the mammal.

47. (New) The method of claim 46, wherein the polynucleotide comprises SEQ ID NO:3.

48. (New) A method for inducing in a mammal a protective immune response against infection from at least one virus selected from the group consisting of the Seoul virus, the Dobrava virus and the Hantaan virus, comprising

- (a) coating onto an inert particle a polynucleotide comprising a promoter operative in a mammalian cell and a Seoul hantavirus M gene segment encoding a G1 glycoprotein and a G2 glycoprotein; and
- (b) accelerating the particles of (a) into epidermal cells of the mammal in vivo to generate an immune response sufficient for protection in the mammal to a hantaviral challenge of the Seoul virus, the Dobrava virus and/or the Hantaan virus.

49. (New) A vaccine for protection against infection by at least one hantavirus selected from the group consisting of the Seoul virus, the Dobrava virus and the Hantaan virus, comprising a composition comprising

(a) an inert particle suitable for carrying a polynucleotide stably coated thereon,
and

(b) a polynucleotide coated onto the particle, which polynucleotide comprises a promoter operative in a mammalian cell and a Seoul hantavirus M gene segment encoding a G1 glycoprotein and a G2 glycoprotein.

50. (New) The method of claim 49, wherein the polynucleotide comprises SEQ ID NO:1.

51. (New) The method of claim 49, wherein the polynucleotide comprises SEQ ID NO:3.--
